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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XC486

Taking of Marine Mammals Incidental to Specified Activities; U.S. Marine Corps Training Exercises at Air Station Cherry Point

AGENCY: National Marine Fisheries Service, National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; issuance of incidental harassment authorization.

SUMMARY: In accordance with the Marine Mammal Protection Act (MMPA) regulation, we hereby give notification that we have issued an Incidental Harassment Authorization (Authorization) to take marine mammals incidental to various training exercises at Marine Corps Air Station (MCAS) Cherry Point Range Complex, North Carolina for a period of one year. The U.S. Marine Corps' activities are military readiness activities pursuant to the Marine Mammal Protection Act (MMPA), as amended by the National Defense Authorization Act (NDAA) for Fiscal Year 2004.

DATES: Effective June 17, 2013 through June 14, 2014.

ADDRESSES: To obtain an electronic copy of the Authorization, write to P. Michael Payne, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910–3225 or download an electronic copy at:

<http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications>.

The following associated document is also available at the same internet address:
The Marine Corps' Environmental Assessment (EA) titled, "Environmental Assessment MCAS Cherry Point Range Operations," for their federal action of supporting and conducting current and emerging training operations. Their EA evaluates the effects of the proposed training operations on the human environment including impacts to marine mammals and their 2009 Finding of No Significant Impact (FONSI) for the activities.
FOR FURTHER INFORMATION CONTACT: Jeannine Cody, National Marine Fisheries Service, Office of Protected Resources, (301) 427-8401.

SUPPLEMENTARY INFORMATION:

Background

Section 101(a)(5)(D) of the Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. 1361 et seq.) directs the Secretary of Commerce to authorize, upon request, the incidental, but not intentional, taking of small numbers of marine mammals of a species or population stock, by United States citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if, after notice of a proposed authorization to the public for review and public comment: (1) we make certain findings; and (2) the taking is limited to harassment.

We shall grant authorization for the incidental taking of small numbers of marine mammals if we find that the taking will have a negligible impact on the species or stock(s), and will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant). The authorization must set forth the permissible methods of taking; other means of effecting the least practicable adverse impact on the species or stock and its habitat; and requirements pertaining to the

mitigation, monitoring and reporting of such taking. We have defined "negligible impact" in 50 CFR 216.103 as "...an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival."

Section 101(a)(5)(D) of the MMPA established an expedited process by which citizens of the United States can apply for an authorization to incidentally take small numbers of marine mammals by harassment. Section 101(a)(5)(D) of the MMPA establishes a 45-day time limit for our review of an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of small numbers of marine mammals. Within 45 days of the close of the public comment period, we must either issue or deny the authorization and must publish a notice in the Federal Register within 30 days of our determination to issue or deny the authorization.

The National Defense Authorization Act of 2004 (NDAA; (Public Law 108–136)) amended section 101(a)(5)(A) of the MMPA by removing the small numbers and specified geographic region provisions; revising the definition of harassment as it applies to a military readiness activity; and explicitly requiring that our determination of “least practicable adverse impact” include consideration of: (1) personnel safety; (2) the practicality of implementation; and (3) impact on the effectiveness of the military readiness activity.

The NDAA’s definition of harassment as it applies to a military readiness activity is: (i) any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild [Level A Harassment]; or (ii) any act that disturbs or is

likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of natural behavioral patterns, including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering, to a point where such behavioral patterns are abandoned or significantly altered [Level B Harassment].

Summary of Request

We received a request from the Marine Corps on January 28, 2013, requesting that we issue we issue an Incidental Harassment Authorization (Authorization) for the take, by Level B harassment only, of small numbers of Atlantic bottlenose dolphins (Tursiops truncatus) incidental to air-to-surface and surface-to-surface training exercises conducted around two bombing targets within southern Pamlico Sound, North Carolina, at Marine Corps Air Station Cherry Point. We received a complete and adequate application on March 19, 2013 and released the application for public comment (see ADDRESSES) for consideration of issuing an Authorization to the USMC. To date, we have issued two, 1-year Authorizations to the Marine Corps for the conduct of the same activities from 2010 to 2012 (75 FR 72807, November 26, 2010; 77 FR January 3, 2012).

Description of the Specified Activity

The Marine Corps plan to conduct weapon delivery training at two bombing targets: Brant Island Target (BT-9) and Piney Island Bombing Range (BT-11) within MCAS Cherry Point Range Complex, located within Pamlico Sound, North Carolina. The two targets are located at the convergence of the Neuse River and Pamlico Sound.

Training at BT-9 would involve air-to-surface (from aircraft to in-water targets) and surface-to-surface (from vessels to in-water targets) warfare training, including bombing, strafing, special (laser systems) weapons; surface fires using non-explosive and explosive

ordnance; and mine laying exercises (inert). Training at BT-11 would involve air- to- surface exercises to provide training in the delivery of conventional (non-explosive) and special (laser systems) weapons. Surface-to-surface training by small military watercraft would also be executed here. The types of ordnances proposed for use at BT-9 and BT-11 include small arms, large arms, bombs, rockets, missiles, and pyrotechnics. All munitions used at BT-11 are inert, practice rounds and no live firing would occur at BT-11.

Training for any activity may occur year-round.

The Marine Corps requested authorization to harass bottlenose dolphins from firing exercises conducted at two bombing targets within MCAS Cherry Point Range Complex, located within Pamlico Sound, North Carolina at the convergence of the Neuse River and Pamlico Sound. These activities include gunnery; mine laying; bombing; or rocket exercises and are classified into two categories here based on delivery method: (1) surface-to-surface gunnery and (2) air-to-surface bombing. Active sonar is not a component of these specified training exercises.

Exercises may occur year round, day or night (approximately 15 percent of training occurs at night). The Marine Corps would conduct all inert and live-fire exercises so that all ammunition and other ordnances strike and/or fall on the land or water based target or within the existing danger zones or water restricted areas.

Acoustic stimuli (i.e., increased underwater sound) generated during the training exercises, may have the potential to cause behavioral disturbance for marine mammals in BT-9 and BT-11. This is the principal means of marine mammal taking associated with these activities. We expect these disturbances to be temporary and result in a temporary

modification in behavior and/or low-level physiological effects (Level B harassment only) of small numbers of certain species of marine mammals.

We have outlined the purpose of the program in a previous notice for the proposed Authorization (78 FR 19224, Friday, March 29, 2013). Refer to the to the notice of the proposed Authorization (78 FR 19224, Friday, March 29, 2013), the application, and the Marine Corps' EA for a more detailed description of the authorized action.

The amounts of all ordnance to be expended at BT-9 and BT-11 (both surface-to-surface and air-to-surface) are 1,225,815 and 1,254,684 rounds, respectively (see Table 1 and 2).

Table 1 Level of live and inert munitions that could be expended at BT-9 2013-2014.

Estimated Munitions¹	Estimated Total No. of Rounds	Estimated Number of Explosive Rounds Having an Impact on the Water	Net Explosive Weight (lb)
Small arms rounds excluding .50 cal	525,610	NA	NA
Small arms - .50 Cal	568,515	NA	NA
Large arms rounds - 40 mm (live)	5,000	5,000	0.1199
Large arms rounds - 40 mm (inert)	117,051	NA	NA
Rocket - 2.57" (live)	48	48	4.8
Rockets – 5.0" (live)	20	20	15.0
Rockets – 2.75" and 5" (inert)	876	NA	N/A
Bombs and G911 grenades (live)	0	NA	0.5
Bombs and grenades (inert)	4,199	NA	NA
Missile – TOW	0	NA	NA
Missile – Hellfire	0	NA	NA
Pyrotechnics	4,496	N/A	NA
Total	1,225,815		N/A

¹ Munitions may be expended from aircraft or small boats.

Table 2 Level of munitions that could be expended at BT-11 2013-2014.

Proposed Munitions¹	Proposed Total No. of Rounds
Small arms rounds excluding .50 cal	610,957
Small arms - .50 Cal	366,775
Large arms rounds – 20 mm through 81 mm (inert)	240,334
Rockets – 2.75” and 5” (inert)	5,592
Bombs and grenades (inert)	22,114
Pyrotechnics	8,912
Total	1,254,684

¹Munitions may be expended from aircraft or small boats.

Comments and Responses

We published a notice of receipt of the Marine Corps’ application and proposed Authorization in the Federal Register on Friday, March 29, 2013 (78 FR 19224). During the 30-day public comment period, we received comments from the Marine Mammal Commission (Commission) and four private citizens. These comments are online at: <http://www.nmfs.noaa.gov/pr/permits/incidental.htm>. Following are the comments and our responses.

Comment 1: The Commission recommended that we require the Marine Corps to: (1) describe in detail the method by which it determined the zones of exposure for gunnery exercises that use large arms; and (2) specify if multiple types of rounds or ordnance would be used within a single exercise and describe in detail how it determined the zones of exposure for those exercises prior to issuing the incidental harassment authorization.

Response: The Marine Corps’ application, as well as subsequent responses provided to the Commission describe how they derived safety zones for gunnery exercises. The method to estimate the number of marine mammals potentially taken by the specified activities is based on dolphin density, the amount and type of ordnance proposed, and distances to our harassment threshold criteria.

Briefly, the Marine Corps estimate the zones of exposure based on impulse, peak pressure, and sound exposure level thresholds (based on our explosive harassment

criteria). During a gunnery exercise using large arms rounds, a person can fire munitions as individual rounds spaced in time, or rapid fire as a burst of individual rounds. Due to the tight spacing in time, the Marine Corps treats the individual rounds within a burst as a single detonation.

(1) For the energy metrics, they calculate the impact area of a burst using a source energy spectrum that is the source spectrum for a single detonation scaled by the number of rounds in a burst.

(2) For the pressure metrics, they calculate the impact area for a burst as equal to the impact area of a single round.

(3) For all metrics, the cumulative impact area of an event consisting of (N) bursts is the product of the impact area of a single burst and the number of bursts, as would be the case if the bursts are sufficiently spaced in time or location as to insure that each burst is affecting a different set of marine wildlife. Last, they model each explosive event for potential impacts to a derived density of marine mammals within the influence area. They sum the results of all individual events over the year to obtain their take estimate.

Comment 2: The Commission also requested that we require the Marine Corps to implement a plan to evaluate the effectiveness of all of its mitigation and monitoring measures before initiating or, at the very latest, in conjunction with the exercises covered by the incidental harassment authorization (i.e., night vision technology, remote-camera system, visual observations during range sweeps and cold passes).

Response: We have worked closely with the Marine Corps over the past two Authorization cycles to develop proper mitigation, monitoring, and reporting requirements designed to minimize and detect impacts from the specified activities. In

order to ensure that we can make the findings necessary for issuance of an Authorization, we have worked with the Marine Corps to develop comprehensive and acceptable mitigation, monitoring, and reporting requirements including a Marine Mammal and Protected Species Monitoring Plan (Plan). We have determined that the current Plan and required monitoring and mitigation measures within the Authorization are adequate to satisfy the requirements of the MMPA.

Comment 3: The Commission also requested that we require the Marine Corps to use the passive acoustic monitoring system to supplement its visual observations as soon as practicable.

Response: The Marine Corps has contracted Duke University to develop and test a real-time passive acoustic monitoring system that will allow automated detection of bottlenose dolphin whistles. Duke University performed the work in two phases. First developing an automated signal detector (a software program) to recognize the whistles of dolphins at BT-9 and BT-11 and second assembling and deploying a prototype for real time monitoring. Phase II is currently in progress and the success of this effort will help direct future monitoring initiatives and activities within the MCAS Cherry Point Range Complex. The passive acoustic monitoring unit remains in prototype until the contractors have completed all testing and the Marine Corps are able to establish a baseline of information to develop standard operating procedures for future activities.

Comment 4: The Commission recommends the NMFS require the USMC to use either direct strike or dynamic Monte Carlo models to determine the probability of ordnance strike.

Response: The Commission recommended “direct strike or dynamic Monte Carlo methods” while noting that the result of using a new risk probability model would likely provide negligible changes from the model described in the application. Because any change would be negligible, we do not agree that this alternative method of modeling is necessary for purposes of issuing an MMPA incidental take authorization at this time.

Description of Marine Mammals in the Area of the Specified Activity

Forty marine mammal species occur within the nearshore and offshore waters of North Carolina; however, the majority of these species are solely oceanic in distribution. Of the 40 species, only one marine mammal species, the bottlenose dolphin (Tursiops truncatus), routinely frequents Pamlico Sound. The endangered West Indian manatee (Trichechus manatus), under the jurisdiction of the U.S. Fish and Wildlife Service, rarely occurs in the area (Lefebvre et al., 2001; DoN 2003).

Based on the best available data, the Marine Corps does not expect to encounter the following species because of these species rare and/or extralimital occurrence in the survey area including the North Atlantic right whale (Eubalaena glacialis); Atlantic spotted dolphin (Stenella frontalis) and common dolphin (Delphinus delphis). Of the 40 species that may be encountered, most are oceanic in distribution and do not venture into the shallow, brackish waters of southern Pamlico Sound. No suitable habitat exists for large whale species in the shallow Pamlico Sound or bombing target vicinity. Accordingly, we did not consider these other species in greater detail. The specified activity has the potential to affect only one marine mammal species under our jurisdiction: the bottlenose dolphin. We refer the public to the previous Federal Register

notice for the proposed Authorization (78 FR 19224, Friday, March 29, 2013) where we present information on this species.

Potential Effects of the Specified Activity on Marine Mammals

As mentioned previously, with respect to military readiness activities, Section 3(18)(B) of the MMPA defines “harassment” as: (i) Any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild [Level A Harassment]; or (ii) any act that disturbs or is likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of natural behavioral patterns, including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering, to a point where such behavioral patterns are abandoned or significantly altered [Level B Harassment].

We have determined that Level B harassment to marine mammals (specifically bottlenose dolphins) could occur incidental to noise and detonations from munitions firing (all military readiness activities) at the bombing targets. These military readiness activities will result in increased noise levels, explosions, and munitions debris within bottlenose dolphin habitat. In the absence of planned mitigation and monitoring measures, it is possible that injury or mortality of bottlenose dolphins could occur; however, due to the implementation of the planned measures, we do not anticipate that harassment would rise to the level of injury (Level A harassment), serious injury, or mortality. Therefore, the Authorization solely authorizes Level B (behavioral) harassment incidental to the Marine Corp’s training activities. We anticipate that bottlenose dolphins may undergo temporary threshold shift, masking, stress response, and altered behavioral patterns (e.g., traveling, resting, opportunistic foraging). The notice

for the proposed Authorization (78 FR 19224, Friday, March 29, 2013) provided complete description of these impacts. In addition, we refer the reader to our proposed and final rulemaking for the Navy Cherry Point Range Complex (74 FR 11057, March 16, 2009 and 74 FR 28370, June 15, 2009 for a full assessment of marine mammal responses and disturbances when exposed to anthropogenic sound.

Potential Effects of the Specified Activity on Marine Mammal Habitat

We provided a detailed discussion of the potential effects of this action on marine mammal habitat in the notice for the proposed Authorization (78 FR 19224, Friday, March 29, 2013). Detonations of live ordnance would result in temporary changes to the water environment. Munitions would hit the targets and not explode in the water. However, because the targets are over the water (i.e., a ship's hull on a shoal), in water explosions could occur. An underwater explosion from these weapons could send a shock wave and blast noise through the water, release gaseous by-products, create an oscillating bubble, and cause a plume of water to shoot up from the water surface. However, these effects would be temporary and not expected to last more than a few seconds.

Similarly, no long term impacts with regard to hazardous constituents are expected to occur. MCAS Cherry Point has an active Range Environmental Vulnerability Assessment (REVA) program in place to monitor impacts to habitat from its activities. One goal of REVA is to determine the horizontal and vertical concentration profiles of heavy metals, explosives constituents, perchlorate nutrients, and dissolved salts in the sediment and seawater surrounding BT-9 and BT-11. The Marine Corps has sampled the explosive constituents (e.g., trinitrotoluene (TNT), cyclotrimethylenetrinitramine (RDX), and hexahydro-trinitro-triazine (HMX) in the sediment or water sample surrounding the BTs

as described in Hazardous Constituents [Subchapter 3.2.7.2] of the MCAS Cherry Point Range Operations EA. At present, they have not detected these constituents in the sediment or water. Metals were not present above toxicity screening values. Perchlorate was detected in a few sediment samples above the detection limit (0.21 ppm), but below the reporting limit (0.6 ppm). The ongoing REVA would continue to evaluate potential munitions constituent migration from operational range areas to off-range areas and MCAS Cherry Point.

While we anticipate that the specified activity may result in marine mammals avoiding certain areas due to temporary ensonification, this impact to habitat and prey resources is temporary and reversible and considered in notice for the proposed Authorization (78 FR 19224, Friday, March 29, 2013), as behavioral modification. The main impact associated with the proposed activity would be temporarily elevated noise levels and the associated direct effects on marine mammals, previously discussed.

Summary of Previous Monitoring

The Marine Corps complied with the mitigation and monitoring required under the previous authorizations (2010-2012). In accordance with the 2010-11 IHA, USMC submitted a final monitoring report, which described the activities conducted and observations made. USMC did not record observations of any marine mammals during training exercises. The only recorded observations – which were of bottlenose dolphins – were on two occasions by maintenance vessels engaged in target maintenance. No marine mammals were observed during range sweeps, air to ground activities, surface to surface activities (small boats), or ad hoc via range cameras. We refer the reader to the notice for the proposed Authorization (78 FR 19224, Friday, March 29, 2013) for a full discussion

of the previous monitoring results. The Marine Corps will submit a monitoring report for the 2012 training season which expired on December 31, 2012, to us by June 31, 2013.

We will post the monitoring report on our website

<http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications>.

Mitigation

In order to issue an incidental take authorization under section 101(a)(5)(D) of the MMPA, we must set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and the availability of such species or stock for taking for certain subsistence uses.

The NDAA of 2004 amended the MMPA as it relates to military-readiness activities and the incidental take authorization process such that “least practicable adverse impact” shall include consideration of personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity. The training activities described in the Marine Corp’s application are military readiness activities.

We have evaluated the applicant’s proposed mitigation measures and considered other measures in the context of ensuring that we prescribe the means of effecting the least practicable adverse impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another: (1) the manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals; (2) the proven or likely efficacy of the specific measure to

minimize adverse impacts as planned; and (3) the practicability of the measure for applicant implementation, including consideration of personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity. We have determined that the mitigation measures described provide the means of effecting the least practicable adverse impacts on marine mammal species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance while also considering personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

The Marine Corps, in collaboration with us, has worked to identify potential practicable and effective mitigation measures, which include a careful balancing of the likely benefit of any particular measure to the marine mammals with the likely effect of that measure on personnel safety, practicality of implementation, and impact on the "military-readiness activity". These mitigation measures include:

(1) Range Sweeps: The VMR-1 squadron, stationed at MCAS Cherry Point, includes three specially equipped HH-46D helicopters. The primary mission of these aircraft, known as PEDRO, is to provide search and rescue for downed 2nd Marine Air Wing aircrews. On-board are a pilot, co-pilot, crew chief, search and rescue swimmer, and a medical corpsman. Each crew member has received extensive training in search and rescue techniques, and is therefore particularly capable at spotting objects floating in the water.

PEDRO crew would conduct a range sweep the morning of each exercise day prior to the commencement of range operations. The primary goal of the pre-exercise sweep is to ensure that the target area is clear of fisherman, other personnel, and protected species.

The sweeps occur at 100-300 meters above the water surface, at airspeeds between 60-100 knots. The path of the sweep runs down the western side of BT-11, circles around BT-9 and then continues down the eastern side of BT-9 before leaving. The sweep typically takes 20-30 minutes to complete. The PEDRO crew communicates directly with range personnel and can provide immediate notification to range operators. The PEDRO aircraft would remain in the area of a sighting until clear if possible or as mission requirements dictate.

If the crew sights marine mammals during a range sweep, they would collect sighting data and enter it into the U.S. Marine Corps sighting database, web-interface, or report generator. They would relay this information to the training Commander. Sighting data includes the following (collected to the best of the observer's ability): (1) species identification; (2) group size; (3) the behavior of marine mammals (e.g., milling, travel, social, foraging); (4) location and relative distance from the BT; (5) date, time and visual conditions (e.g., Beaufort sea state, weather) associated with each observation; (6) direction of travel relative to the BT; and (7) duration of the observation.

(2) Cold Passes: All aircraft participating in an air-to-surface exercise would be required to perform a "cold pass" immediately prior to ordnance delivery at the BTs both day and night. That is, prior to granting a "First Pass Hot" (use of ordnance), pilots would be directed to perform a low, cold (no ordnance delivered) first pass which serves as a visual sweep of the targets prior to ordnance delivery to determine if unauthorized civilian vessels or personnel, or protected species, are present. They conduct the cold pass with the aircraft (helicopter or fixed-winged) flying straight and level at altitudes of 200-3000 feet over the target area. The viewing angle is approximately 15 degrees. A blind

spot exists to the immediate rear of the aircraft. Based upon prevailing visibility, a pilot can see more than one mile forward upon approach. The aircrew and range personnel make every attempt to ensure clearance of the area via visual inspection and remotely operated camera operations (see Monitoring and Reporting section). The Range Controller may deny or approve the First Pass Hot clearance as conditions warrant.

(3) Delay of Exercises: The Marine Corps would consider an active range “fouled” and not available for use if a marine mammal is present within 1,000 yards (914 m) of the target area at BT-9 or anywhere within Rattan Bay (BT-11). Therefore, if they observe a marine mammal within 1,000 yards (914 m) of the target at BT-9 or anywhere within Rattan Bay at BT-11 during the cold pass or from range camera detection, they would delay training until the marine mammal moves beyond and on a path away from 1,000 yards (914 m) from the BT-9 target or out of Rattan Bay at BT-11. This mitigation applies to both air-to-surface and surface-to-surface exercises.

(4) Range Camera Use: To increase the safety of persons or property near the targets, Range Operation and Control personnel monitor the target area through two tower mounted safety and surveillance cameras. The remotely operated range cameras are high resolution and, according to range personnel, allow a clear visual of a duck floating near the target. The cameras allow viewers to see animals at the surface and breaking the surface, but not underwater. The camera system has night vision (IR) capabilities with resolution levels almost as good as during daytime. Lenses on the camera system have a focal length of 250 mm to 1500 mm, with view angle of (2.2 ° x 1.65° in wide-view) and (0.55° x 41° in narrow-view) respectively. Using the night-time capabilities, with a narrow view, an observer could identify a 1 x 1 meter target out to three kilometers.

Again, in the event that a marine mammal is sighted within 1000 yards (914 m) of the BT-9 target, or anywhere within Rattan Bay, the target would be declared fouled. Operations may commence in the fouled area after the animal(s) have moved 1000 yards (914 m) from the BT-9 target and/or out of Rattan Bay.

(5) Vessel Operation: All vessels used during training operations would abide by the Service's Southeast Regional Viewing Guidelines designed to prevent harassment to marine mammals (<http://www.nmfs.noaa.gov/pr/education/southeast/>).

(6) Stranding Network Coordination: The Marine Corps would coordinate with the local NMFS Stranding Coordinator for any unusual marine mammal behavior and any stranding, beached live/dead, or floating marine mammals that may occur at any time during training activities or within 24 hours after completion of training.

Monitoring and Reporting

In order to issue an Authorization for an activity, section 101(a)(5)(D) of the MMPA states that we must set forth "requirements pertaining to the monitoring and reporting of such taking". The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for Incidental Harassment Authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present.

Monitoring measures prescribed by us should accomplish one or more of the following general goals: (a) an increase in our understanding of how many marine mammals are likely to be exposed to munitions noise and explosions that we associate with specific adverse effects, such as behavioral harassment, threshold shift; (b) an

increase in our understanding of how individual marine mammals respond (behaviorally or physiologically) to gunnery and bombing exercises (at specific received levels) expected to result in take; (c) an increase in our understanding of how anticipated takes of individuals (in different ways and to varying degrees) may impact the population, species, or stock (specifically through effects on annual rates of recruitment or survival); (d) an increased knowledge of the affected species; (e) an increase in our understanding of the effectiveness of certain mitigation and monitoring measures; (f) a better understanding and record of the manner in which the authorized entity complies with the Authorization; and (g) an increase in the probability of detecting marine mammals, both within the safety zone (thus allowing for more effective implementation of the mitigation) and in general.

The suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals expected to be present within the action area are as follows:

(1) Protected Species Observer Training: Pilots, operators of small boats, and other personnel monitoring for marine mammals would be required to take the Marine Species Awareness Training (Part 1 and 2), provided by the U.S. Navy. This training would make personnel knowledgeable of marine mammals, protected species, and visual cues related to the presence of marine mammals and protected species.

(2) Weekly and Post-Exercise Monitoring: The Marine Corps would conduct post-exercise monitoring the morning following an exercise, unless an exercise occurs on a Friday, in which case the post-exercise sweep would take place the following Monday.

Weekly monitoring events would include a maximum of five pre-exercise and four post-exercise sweeps. The maximum number of days that would elapse between pre- and post-exercise monitoring events would be approximately three days, and would normally occur on weekends. If marine mammals are observed during this monitoring, sighting data identical to those collected by PEDRO crew would be recorded.

(3) Long-term Monitoring: The Marine Corps has awarded Duke University Marine Lab (Duke) a contract to obtain abundance, group dynamics (e.g., group size, age census), behavior, habitat use, and acoustic data on the bottlenose dolphins which inhabit Pamlico Sound, specifically those around BT-9 and BT-11. Duke began conducting boat-based surveys and passive acoustic monitoring of bottlenose dolphins in Pamlico Sound in 2000 (Read et al., 2003) and specifically at BT-9 and BT-11 in 2003 (Mayer, 2003). To date, boat-based surveys indicate that bottlenose dolphins may be resident to Pamlico Sound and use BT restricted areas on a frequent basis. Passive acoustic monitoring (PAM) provides more detailed insight into how dolphins use the two ranges, by monitoring for their vocalizations year-round, regardless of weather conditions or darkness. In addition to these surveys, Duke scientists are testing a real-time passive acoustic monitoring system at BT-9 that will allow automated detection of bottlenose dolphin whistles, providing yet another method of detecting dolphins prior to training operations. Although it is unlikely this PAM system would be active for purposes of implementing mitigation measures before an exercise prior to expiration of the proposed Authorization, it could be operational for future MMPA incidental take authorizations and would be evaluated for effectiveness at the appropriate time.

(4) Reporting: The Marine Corps will submit a report to us within 90 days after expiration of the Authorization or, if a subsequent incidental take authorization is requested, within 120 days prior to expiration of the Authorization. The report will summarize the type and amount of training exercises conducted, all marine mammal observations made during monitoring, and if mitigation measures were implemented. The report will also address the effectiveness of the monitoring plan in detecting marine mammals.

General Notification of Injured or Dead Marine Mammals

The Marine Corps will systematically observe training operations for injured or disabled marine mammals. In addition, the Marine Corps would monitor the principal marine mammal stranding networks and other media to correlate analysis of any dolphin strandings that could potentially be associated with Cherry Point training operations.

Marine Corps personnel will ensure that we are notified immediately or as soon as clearance procedures allow if an injured, stranded, or dead marine mammal is found during or shortly after, and in the vicinity of, any training operations. The Marine Corps will provide us with species or description of the animal(s), the condition of the animal(s) (including carcass condition if the animal is dead), location, time of first discovery, observed behaviors (if alive), and photo or video (if available).

In the event that an injured, stranded, or dead marine mammal is found by Marine Corps personnel that is not in the vicinity of, or found during or shortly after operations, the Marine Corps personnel will report the same information as listed above as soon as operationally feasible and clearance procedures allow.

General Notification of a Ship Strike

In the event of a vessel strike, at any time or place, the Marine Corps shall do the following:

- Immediately report to us the species identification (if known), location (lat/long) of the animal (or the strike if the animal has disappeared), and whether the animal is alive or dead (or unknown);
- Report to us as soon as operationally feasible the size and length of the animal, an estimate of the injury status (e.g., dead, injured but alive, injured and moving, unknown, etc.), vessel class/type and operational status;
- Report to us the vessel length, speed, and heading as soon as feasible; and
- Provide us a photo or video, if equipment is available.

Estimated Take by Incidental Harassment

The following provides the Marine Corps' model for take of dolphins from explosives (without consideration of mitigation and the conservative assumption that all explosives would land in the water and not on the targets or land) and potential for direct hits and our analysis of potential harassment from small vessel and aircraft operations.

The method to estimate the number of marine mammals potentially taken by the specified activities is based on bottlenose dolphin density, the amount and type of ordnance proposed, and distances to our harassment threshold criteria. We refer the reader to the notice for the proposed Authorization (78 FR 19224, Friday, March 29, 2013) for an description of the acoustic criteria for underwater detonations (Table 3).

Table 3 Effects, Criteria, and Thresholds for Impulsive Sounds.

Effect	Criteria	Metric	Threshold	Effect
Mortality	Onset of Extensive Lung Injury	Goertner modified positive impulse	indexed to 30.5 psi-msec (assumes 100 percent small animal at 26.9 lbs)	Mortality
Injurious Physiological	50percent Tympanic Membrane Rupture	Energy flux density	1.17 in-lb/in ² (about 205 dB re 1 microPa ² -sec)	Level A
Injurious Physiological	Onset Slight Lung Injury	Goertner modified positive impulse	indexed to 13 psi-msec (assumes 100 percent small animal at 26.9 lbs)	Level A
Non-injurious Physiological	TTS	Greatest energy flux density level in any 1/3-octave band (> 100 Hertz (Hz) for toothed whales and > 10 Hz for baleen whales) - for total energy over all exposures	182 dB re 1 microPa ² -sec	Level B
Non-injurious Physiological	TTS	Peak pressure over all exposures	23 psi	Level B
Non-injurious Behavioral	Multiple Explosions Without TTS	Greatest energy flux density level in any 1/3-octave (> 100 Hz for toothed whales and > 10 Hz for baleen whales) - for total energy over all exposures (multiple explosions only)	177 dB re 1 microPa ² -sec	Level B

Take from Explosives

The Marine Corps conservatively modeled that all explosives would detonate at a 1.2 m (3.9 ft) water depth despite the training goal of hitting the target, resulting in an above water or on land explosion. For sources that are detonated at shallow depths, it is frequently the case that the explosion may breach the surface with some of the acoustic energy escaping the water column. The source levels presented in the table above have not been adjusted for possible venting nor does the subsequent analysis take this into account. Properties of explosive sources used at BT-9, including net explosive weight

(NEW), peak one-third-octave (OTO) source level, the approximate frequency at which the peak occurs, and rounds per burst are described in Table 9. Refer to Table 10 for distances to our harassment threshold levels from these sources.

Table 4 Source Weights and Peak Source Levels.

Source Type	NEW	Peak OTO SL	Frequency of Peak OTO SL	Rounds per Burst
2.75-inch Rocket	4.8 pounds (lbs)	223.9 dB re: 1µPa	~ 1500 Hertz (Hz)	1
5-inch Rocket	15.0 lbs	228.9 dB re: 1µPa	~ 1000 Hz	1
40 mm	0.1199 lbs	227.8 dB re: 1µPa	~ 1100 Hz	5

Table 5 Distances to our harassment thresholds from explosive ordnances.

	Behavioral Disturbance (177 dB Energy)	TTS (23 psi)	Level A (13 psi-msec)	Mortality (31 psi-ms)
2.75-inch Rocket HE	326.6 meter (m) (1,071 feet (ft))	172 m (564 ft)	47 m (154 ft)	27 m (89 ft)
5" Rocket HE	397.7 m 1,034 ft	255 m (837 ft)	61 m (200 ft)	39 m (128 ft)
40mm HE	144 m (472 ft)	N/A	10 m (33 ft)	5 m (16 ft)

In order to calculate take, the Marine Corps considered the distances to which animals could be harassed along with dolphin density. They used the density estimate from Read *et al.* (2003) to calculate take from munitions firing (0.183/square kilometer (km²)) and based take calculations for munitions firing on 100 percent water detonation. Because the goal of training is to hit the targets and not the water, we consider these take estimates based on 100 percent water detonation of munitions to be conservative.

Based on dolphin density and amount of munitions expended, there is very low potential for Level A harassment, serious injury, and mortality and monitoring and mitigation measures are anticipated to further negate this potential. Accordingly, we are not proposing to issue these levels of take. In total, from firing of explosive ordnances,

the Marine Corps has requested, and we propose to issue, the incidental take of 25 bottlenose dolphins from Level B harassment (Table 6).

Table 6 Number of dolphins potentially taken from exposure to explosives based on threshold criteria.

Ordnance Type	Level B- Behavioral (177dB re 1microPa ² -s)	Level B- TTS (23 psi)	Level A- Injurious (205 dB re 1microPa ² -s or 13 psi)	Mortality (30.5 psi)
2.75" Rocket HE	0.71	0.99	0.05	0.01
5" Rocket HE	0.41	0.64	0.05	0.01
40mm HE	9.46	11.07	0.16	0.0
Total	10.58	12.71	0.26	0.02

Take from Direct Hit

As described in the notice for the proposed Authorization (78 FR 19224, Friday, March 29, 2013), we estimate that the potential risk of a direct hit to an animal in the target area is discountable. The probability of hitting a bottlenose dolphin at the BTs can be derived as follows: Probability = dolphin's dorsal surface area times the density of dolphins. The estimated dorsal surface area of a bottlenose dolphin is 1.425 m² (or the average length of 2.85 m times the average body width of 0.5 m). Thus, using Read et al. (2003)'s density estimate of 0.183 dolphins/km², without consideration of mitigation and monitoring implementation, the probability of a dolphin being hit within BT-9 is 2.61 x 10⁻⁷ and within BT-11 is 9.4 x10⁻⁸. Using the proposed levels of ordnance expenditures at each in-water BT (78 FR 19224, Friday, March 29, 2013) and taking into account that only 36 percent of the ordnance deployed at BT-11 is over water, as described in the application, the estimated potential number of ordnance strikes on a marine mammal per year is 0.263 at BT-9 and 0.034 at BT-11. It would take approximately three years of ordnance deployment at the BTs before it would be likely or probable that one bottlenose

dolphin would be struck by deployed inert ordnance. Again, these estimates are without consideration to proposed monitoring and mitigation measures.

The Marine Corps proposed three methods of exercise monitoring (i.e., PEDRO, cold pass, and range cameras). When considering the implementation of the mitigation and monitoring measures, the chance of a marine mammal being taken by direct hit is discountable.

Take from Vessel and Aircraft Presence

Interactions with vessels are not a new experience for bottlenose dolphins in Pamlico Sound. Pamlico Sound is heavily used by recreational, commercial (fishing, daily ferry service, tugs, etc.), and military (including the Navy, Air Force, and Coast Guard) vessels year-round. The NMFS' Southeast Regional Office has developed marine mammal viewing guidelines to educate the public on how to responsibly view marine mammals in the wild and avoid causing a take (<http://www.nmfs.noaa.gov/pr/education/southeast>). The guidelines recommend that vessels should remain a minimum of 50 yards from a dolphin, operate vessels in a predictable manner, avoid excessive speed or sudden changes in speed or direction in the vicinity of animals, and not to pursue, chase, or separate a group of animals. The Marine Corps would abide by these guidelines to the fullest extent practicable. The Marine Corps would not engage in high speed exercises should a marine mammal be detected within the immediate area of the BTs prior to training commencement and would never closely approach, chase, or pursue dolphins. Detection of marine mammals would be facilitated by personnel monitoring on the vessels and those marking success rate of target hits and monitoring of remote camera on the BTs (see Monitoring and Reporting section).

Based on the description of the action, the other activities regularly occurring in the area, the species that may be exposed to the activity and their observed behaviors in the presence of vessel traffic, and the implementation of measures to avoid vessel strikes, we determined that it is unlikely that the operation of vessels during surface-to-surface maneuvers will result in the take of any marine mammals, in the form of either behavioral harassment, injury, serious injury, or mortality.

Aircraft would move swiftly through the area and would typically fly approximately 914 m (2,998.7 ft) from the water's surface before dropping unguided munitions and above 4,572 m (2.8 miles) for precision-guided munitions bombing. While the aircraft may approach as low as 152 m (500 ft) to drop a bomb this is not the norm and would never been done around marine mammals. Regional whale watching guidelines advise aircraft to maintain a minimum altitude of 300 m (1,000 ft) above all marine mammals, including small odontocetes, and to not circle or hover over the animals to avoid harassment. Our approach regulations limit aircraft from flying below 300 m (1,000 ft) over a humpback whale (Megaptera novaeangliae) in Hawaii, a known calving ground, and limit aircraft from flying over North Atlantic right whales closer than 460 m (1,509 ft). Given that Marine Corps aircraft would not fly below 300 m (984 ft) on the approach, would not engage in hovering or circling the animals, and would not drop to the minimal altitude of 152 m (500 ft) if a marine mammal is in the area, we believe it unlikely that the operation of aircraft, as described above, will result in take of bottlenose dolphins in Pamlico Sound in any manner.

Negligible Impact Analysis and Determination

Pursuant to our regulations implementing the MMPA, an applicant is required to estimate the number of animals that will be “taken” by the specified activities (i.e., takes by harassment only, or takes by harassment, injury, and/or death). This estimate informs the analysis that we must perform to determine whether the activity will have a “negligible impact” on the species or stock. We have defined “negligible impact” in 50 CFR 216.103 as: “an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.” A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (i.e., population-level effects). An estimate of the number and manner of takes, alone, is not enough information on which to base a negligible impact determination. We must also consider other factors, such as the likely nature of any responses (their intensity, duration, etc.), the context of any responses (critical reproductive time or location, migration, etc.), or any of the other variables mentioned in the first paragraph (if known), as well as the number and nature of estimated Level A takes, the number of estimated mortalities, and effects on habitat.

The Marine Corps has conducted gunnery and bombing training exercises at BT-9 and BT-11 for several years and, to date, the monitoring reports indicate that no dolphin injury, serious injury, or mortality has been attributed to these military training exercises. The Marine Corps has a history of notifying the NMFS stranding network when any injured or stranded animal comes ashore or is spotted by personnel on the water. Therefore, stranded animals have been examined by stranding responders, further

confirming that it is unlikely training contributes to marine mammal injuries or deaths. Due to the implementation of the aforementioned proposed mitigation measures, no take by Level A harassment or serious injury or mortality is anticipated nor would any be authorized in the IHA. We are proposing; however, to authorize 25 Level B harassment takes associated with training exercises.

The Marine Corps has proposed a 1,000 yard (914 m) safety zone around BT-9 despite the fact that the distance to our explosive Level B harassment threshold is 228 yards (209 m). They also would consider an area fouled if any dolphins are spotted within Raritan Bay (where BT-11 is located)—triggering a shutdown of activities in that area. The Level B harassment takes allowed for in the Authorization would be of very low intensity and would likely result in dolphins being temporarily behaviorally affected by bombing or gunnery exercises. In addition, takes may be attributed to animals not using the area when exercises are occurring; however, this is difficult to calculate. Instead, we look if the specified activities occur during and within habitat important to vital life functions to better inform its negligible impact determination.

Read et al. (2003) concluded that dolphins rarely occur in open waters in the middle of North Carolina sounds and large estuaries, but instead are concentrated in shallow water habitats along shorelines. However, no specific areas have been identified as vital reproduction or foraging habitat. Scientific boat based surveys conducted throughout Pamlico Sound conclude that dolphins use the areas around the BTs more frequently than other portions of Pamlico Sound (Maher, 2003) despite the Marine Corps actively training in a manner identical to the specified activities described here for years.

As described in the Affected Species section of this notice, bottlenose dolphin stock segregation is complex with stocks overlapping throughout the coastal and estuarine waters of North Carolina. It is not possible for the Marine Corps to determine to which stock any individual dolphin taken during training activities belong as this can only be accomplished through genetic testing. However, it is likely that many of the dolphins encountered would belong to the Northern or Southern North Carolina Estuarine System stocks. These stocks have abundance estimates of 950 and 2,454, respectively. We authorize 25 takes of bottlenose dolphins in total; therefore, this number represents 2.6 and 1.0 percent, respectively, of those populations. This species is not listed as threatened or endangered under the ESA

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the mitigation and monitoring measures, we find that the specified USMC Air Station Cherry Point BT-9 and BT-11 training activities would result in the incidental take of marine mammals, by Level B harassment only, and that the total taking from would have a negligible impact on the affected species or stocks.

Subsistence Harvest of Marine Mammals

Marine mammals are not taken for subsistence uses within Pamlico Sound; therefore, issuance of an IHA to the USMC for MCAS Cherry Point training exercises would not have an unmitigable adverse impact on the availability of the affected species or stocks for subsistence use.

Endangered Species Act (ESA)

No ESA-listed marine mammals are known to occur within the action area. Therefore, there is no requirement for us to consult under Section 7 of the ESA on the issuance of an Authorization under section 101(a)(5)(D) of the MMPA. However, ESA-listed sea turtles may be present within the action area.

On September 27, 2002, NMFS issued a Biological Opinion (BiOp) on Ongoing Ordnance Delivery at Bombing Target 9 (BT-9) and Bombing Target 11 (BT-11) at Marine Corps Air Station, Cherry Point, North Carolina. The BiOp, which is still in effect, concluded that the USMC's proposed action will not result in adverse impacts to any ESA-listed marine mammals and is not likely to jeopardize the continued existence of the endangered green turtle (Chelonia mydas), leatherback turtle (Dermochelys coriacea), Kemp's ridley turtle (Lepidochelys kempii), or threatened loggerhead turtle (Caretta caretta). The Authorization will not result in effects beyond those considered in the 2002 BiOp and we do not anticipate the need for further Section 7 consultation for the Authorization or the underlying activities proposed by the Marine Corps. No critical habitat has been designated for these species in the action area; therefore, none will be affected.

National Environmental Policy Act (NEPA)

On February 11, 2009, the Marine Corps issued a Finding of No Significant Impact for its Environmental Assessment (EA) on MCAS Cherry Point Range Operations. Based on the analysis of the EA, the Marine Corps determined that the proposed action will not have a significant impact on the human environment. We adopted the Marine Corps' EA and signed a Finding of No Significant Impact on August 31, 2010. We have

again reviewed the proposed application and public comments and determined that there are no substantial changes to the proposed action or new environmental impacts or concerns. Therefore, we have determined that a new or supplemental EA or Environmental Impact Statement is unnecessary. The EA referenced above is available for review at <http://www.nmfs.noaa.gov/pr/permits/incidental.htm>.

Authorization

We have issued an Incidental Harassment Authorization to the Marine Corps for the take of marine mammals incidental to various training exercises at Marine Corps Air Station (MCAS) Cherry Point Range Complex, North Carolina, July 1, 2013 through June 30, 2014, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated.

Dated: July 10, 2013.

Donna S. Wieting
Director,
Office of Protected Resources,
National Marine Fisheries Service.

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